



# Virtual Data Marts Drive Drug Discoveries

## BUSINESS BACKGROUND

Pfizer's Global Research & Development (PGRD) is the largest pharmaceutical R&D organization in the world. Its researchers and staff are not content on waiting to witness the evolution of the industry. Instead, they are building on the current successes and capabilities with the goal of developing the most compelling story of scientific discoveries.

Playing a key role in turning molecules into products, PGRD's Worldwide Pharmaceutical Sciences (WWPS) department develops drug delivery systems and products such as tablets, capsules, injectables, ointments, ophthalmics, and controlled release formulations for clinical studies and, ultimately, commercial use. The work of WWPS begins in the early phases of discovery, optimizing new compounds and making sure the selections have the right properties to be rapidly developed into a commercial product. After one compound is declared a viable drug candidate, they characterize the material and convert it into a dosage form for evaluation in clinical studies. If the new compound is proven successful in the studies, the WWPS (Pharma Sci) department facilitates transfer and scale-up to Pfizer's commercial manufacturing sites.

## CASE STUDY BACKGROUND

In order to accomplish the demanding challenges of drug discovery, the enterprise must foster and constantly build agility to respond to change. The best plans must be constantly updated with the latest and most relevant strategies and supporting information. Often, new ground is being charted, posing questions that have never been asked before.

Many of the questions asked are strategic and the expected data sources are complex, requiring information from both enterprise and local transactional systems. The need for speed in answering these questions is high, as is the need for understanding the likely sources of required data input as well as relationships between sources. The complex nature of the required data puts pressure on the team who must field the request and deliver answers to a short timeline and on short notice.

A support group was formed within Pharma Sci to deliver solutions to these projects. This group is called Business Information Systems (BIS) and resides in the business (not in IT). Its charter is to deliver data quickly, to react fast to change, and to always be agile to the business needs.

A typical project on which BIS would engage might sound like this, "We have an API (active pharmaceutical ingredient, or molecule in a new drug) and we need some key planning and resource information to run this project. It is a specific compound for a specific target with multiple indications (possibly multiple compounds). How many resources are assigned? What are they working on? What is the forecast? If we change the business model, how do we execute that? We need our planning data to answer these questions. We need this data for our business and strategy planning meeting next Tuesday!"

*"In our Integration Competency Center, we have all the DI tools you can find out there on the market. But when senior execs come to me daily with key project/resource questions whose answers will determine the courses of action we'll take in running our business, my team uses the rapid deployment methods that are built into Composite. This reduces each project from 4-6 weeks to 2-3 days."*

Michael Linhares, Ph.D.,  
Business Information Systems,  
Pfizer Global Research & Development

## AT-A-GLANCE

### Industry

Pharmaceutical

### Business Problem Solved

Rapid Deployment of Business Planning and Strategy Insight

### Data Integration Patterns

Rapid Prototyping and Deployment to answer strategic business questions more quickly, to increase key IT and user role efficiency, and to reduce waste

### Composite Software Products

Composite Information Server 4.6

### Data Sources

- Microsoft Enterprise Project Manager
- Customer Applications
- ERP

### Data Consumers

Stakeholders, Executive Team, VPs, SVPs

### Platform

Linux

## THE PROBLEM

The development of large, complex systems, no matter what they are used for, requires a heavy emphasis on standardization and rigid processes to be successful. But the balancing of standards and agile processes when focusing on rapid deployment is critical to the success of the resulting product. Utilization of the enterprise technology standards and compatible tools is imperative. Conforming to the shared services procedures, the enterprise strategic framework, and to the needs of corporate partners were necessary conditions for any BIS solution.

In the past, the standard approach to these types of projects oscillated between building out a formal, repeatable solution in a data mart (traditionally considered to be the most enduring and most respected long-term solution), and creating a “spreadmart” (informal, spreadsheet-based solutions that produced a “good enough” solution quickly). The spreadmart approach, while convenient, did not conform to controls (such as security), scalability, and re-use across various user domains.

Additionally, business analysts’ time is always in scarce supply. It often fell to these people to devise a solution because the more formal approach would take too long (4-6 weeks). The people who knew the data best did not have the time or experience to build out a formal solution.

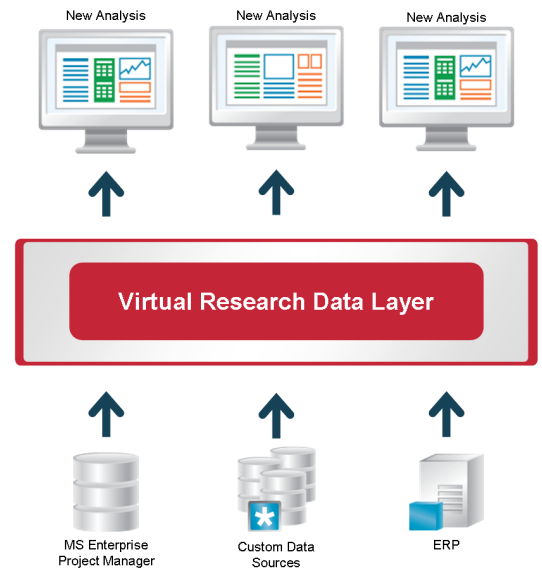
## THE SOLUTION

The Business Information Systems team put in place a framework for rapid deployment of information access using Composite Software. The Composite Information Server allows support of common web-based access technologies. In a typical prototyping scenario, it is expected that the prototype will function only for limited purposes. Later, additional investment can be made as required to transform the working prototype into its final form for re-use. This might be a physical solution, such as a data mart, or a virtual solution. If a virtual solution is desired, the prototype itself becomes a ready-to-use solution.

For some projects, testing will continue beyond the first delivery of answers to the stakeholders, followed by a final production version ready for scaling up to volume if needed. In the past, the investment in the initial prototype was considered to be a loss and it could take considerable time before a production solution would be available. The difference between the BIS rapid deployment approach and typical rapid prototyping efforts is that the solutions the team produces are sustainable at minimal cost, allow for “in the field” adjustments, and expose production data from production enterprise systems early in the development cycle.

These Composite features helped support the project goals:

- Ease of use in uniting data from multiple disparate sources of data
- Superior speed for lite transformations
- The benefits on solution performance from caching
- Rapid prototyping capabilities by showing sample result sets during model builds



A virtual research layer based on the Composite Information Server.

## THE RESULT

- 90% reduction in time to create a new report using the data abstraction layer
- 1000% faster time-to-value (business benefits) for new views and applications on an annual budget that totals several \$100,000's.
- 200% ROI in 3 months elapsed time of CIS solution use
- 100% increase in key business analyst productivity by reducing the wasted effort of creating permanent data mart solutions for one-time, non-recurring data integration projects
- 5% improvement in R&D project delivery through faster deployment of strategic planning information to key line-of-business senior executives and managers